WHAT IS CLAIMED IS:

1. A method for pattern-coating a dispersion slurry containing a water-absorbing solid dispersed in a liquid medium on a surface of a substrate sheet, comprising the steps of:

forming a layer containing said dispersion slurry between a upper layer and a lower layer by supplying the dispersion slurry in a space between an upper layer and an lower layer, said upper layer being a flexible cover film and said lower layer being the substrate sheet traveling under said upper layer, and filling said space with said dispersion slurry; and

forming a convex-and-concave pattern on said layer containing dispersion slurry by rotating a rotating pattern roll having a convex-and-concave pattern at the circumference surface thereof into the same direction as the traveling direction of the substrate sheet, while pushing said flexible cover film with the convex portions from upper portion of said flexible cover film.

2. A method for pattern-coating a dispersion slurry containing a water-absorbing solid dispersed in a dispersion medium on a surface of a substrate sheet, comprising the steps of:

forming a coating layer containing said dispersion slurry on the surface of said substrate sheet, by positioning a rotating pattern roll having a convex-and-concave portion at the circumference surface thereof above said substrate sheet traveling into the longitudinal direction of the sheet via a cover film, and by continuously supplying said dispersion slurry between said substrate sheet and said cover film while rotating

said rotating pattern roll in the same direction as the traveling direction of said substrate sheet; and

forming a first region and a second region on the surface of said substrate sheet, said first region having said coating layer in thicker thickness and said second region having said coating layer in thinner thickness or scarcely not having said coating layer, with a pattern corresponding to the pattern of said convex-and-concave portion, by pushing said coating layer with said rotating pattern roll via said cover film.

3. The method for coating as claimed in claims 1 or 2, wherein said flexible cover film has a contraction and expansion elasticity with 50% or greater of rupture elongation.

4. The method for coating as claimed in claim 1 or 2, wherein said flexible cover film has a non-contraction and expansion elasticity with 50% or less of rupture elongation.

5. The method for coating as claimed in claim 1 or 2, wherein said flexible cover film comprises a film with contraction and expansion elasticity and a non-elastic film, said film with contraction and expansion elasticity being partially overlapped with said non-elastic film.

6. The method for coating as claimed in claim 2, wherein said water-absorbing solid is SAP, and a pushing force of said rotating pattern roll to said substrate sheet is adjusted such that an amount of SAP contained in said coating layer in said first region is 50 to 500 g/m2 and that of in said second region is 10 to 150 g/m2, when converted to the basis weight of SAP

7. The method for coating as claimed in claim 2, wherein said water-absorbing solid is SAP, and a pushing force of said rotating pattern roll to said substrate sheet is adjusted such that an amount of SAP contained in said coating layer in said first region is 50 to 500 g/m2 and that of in said second region is less than 10 g/m^2, when converted to the basis weight of SAP

8. The method for coating as claimed in claims 6 or 7,

wherein said SAP has 1500 μm or less in its particulate diameter of its spherical approximation in the particulates, powders or flaky form;

said dispersion medium is a mixed solvent of organic solvent and water, the organic solvent having a swelling-inhibition effect with respect to the SAP; and

said substrate sheet is a liquid-pervious unwoven fabric.

9. The method for coating as claimed in claims 6 or 7,

wherein said dispersion medium is a hydrated-organic solvent medium with water content of 20% or more which partially have a swelling effect with respect to the SAP,

said SAP is in a swelled state of twice to ten times with respect to its self-weight in the dispersion medium, and

said substrate sheet is a non-woven fabric.

10. The method for coating as claimed in claim 8 or 9, wherein a dispersion slurry consisting of three components, one of which is a highly defibrillated fiber of wood pulp as a third additives other than said dispersion medium and said SAP, is used as a dispersion slurry.

11. The method for coating as claimed in claim 10,

wherein said highly defibrillated wood pulp as said additives has 1 mm or less of fiber length and 250% or less of water retention value, and

said pulp is added to said dispersion slurry in 2 to 10% with respect to said SAP.

12. An apparatus for pattern-coating a dispersion slurry containing a water-absorbing solid dispersed in a dispersion medium on a substrate sheet, comprising:

a traveling mechanism for traveling said substrate

sheet into the longitudinal direction thereof

a rotating pattern roll having a predetermined convex-and-concave pattern on the circumference surface thereof such that the center of axle is vertically positioned;

a cover film for covering the circumference surface of said rotating pattern roll to prevent said dispersion slurry from being contact with the circumference surface of said rotating pattern roll, a front end of said cover film being positioned in the downstream from the lowest position of said rotating pattern roll; and

a slurry supplier for continuously supplying said dispersion slurry on the said substrate sheet from a discharge portion of said supply supplier at a outlet position being positioned between said cover film and said substrate sheet;

wherein said apparatus is constituted such that a first region and a second region are formed on the surface of said substrate sheet, the first region having said coating layer in thicker thickness and the second region having said coating layer in thinner thickness or scarcely not having said coating layer, with a pattern corresponding to the pattern of said convex-and-concave portion of said rotating pattern roll, by pushing said coating layer with said rotating pattern roll via said cover film.

13. The apparatus for coating as claimed in claim 12, wherein said front end of said cover film is not fixed to any members.

14. The apparatus for coating as claimed in claim 13,

wherein the diameter of said rotating pattern roll is 100 to 500 mm, and

said front end of said cover film is extended by 1 to 50 mm to the downstream from the lowest position of said rotating pattern roll in the traveling direction of said substrate sheet.

15. The apparatus for coating as claimed in any one of claims 12 to 14, wherein said cover film except said front end thereof is fixed at both ends in the axis direction of said rotating pattern roll by a side seal.

16. The apparatus for coating as claimed in claim 15, wherein a length, in the rotating direction of said rotating pattern roll, of each convex portion of said convex-and-concave pattern formed in the circumference surface of said rotating pattern roll is smaller than the length between the rear end of one of said convex portion and a front end of the adjacent one of said convex portion.

17. The apparatus for coating as claimed in claim 16, wherein the length of the convex portion of said rotating pattern roll is 20 to 150 mm.

18. The apparatus for coating as claimed in any one of claims 12 to 17, wherein a line-coating plate for supplying said dispersion slurry with band shape on the surface of said substrate sheet is provided in said apparatus.

19. The apparatus for coating as claimed in any one of claims 12 to 18, wherein a support roll facing opposite said rotating pattern roll, said substrate sheet being ridden between the two rolls is provided in said apparatus, at the closest position of the surface of said substrate sheet to the circumference surface of said rotating pattern roll.

20. The apparatus for coating as claimed in any one of claims 12 to 19, wherein a seal plate for preventing said dispersion slurry and/or a part thereof from falling down and passing through said substrate sheet down to said substrate sheet is provided at a position where said dispersion slurry is supplied on the surface of said substrate sheet.

21. The apparatus for coating as claimed in any one of claims 12 to 20, wherein said traveling mechanism is a conveyer for traveling said substrate sheet.

22. The apparatus for coating as claimed in any

one of claims 12 to 21,

wherein said slurry supplier is a temporary retaining portion for said dispersion slurry, and

said apparatus is constituted such that:

said substrate sheet is positioned just on said traveling mechanism;

said cover film is positioned on said substrate sheet;

said rotating pattern roll is positioned above said cover film;

said discharge portion of said supply supplier of said temporary retaining portion is the lowest portion of said rotating pattern roll in the upstream direction.